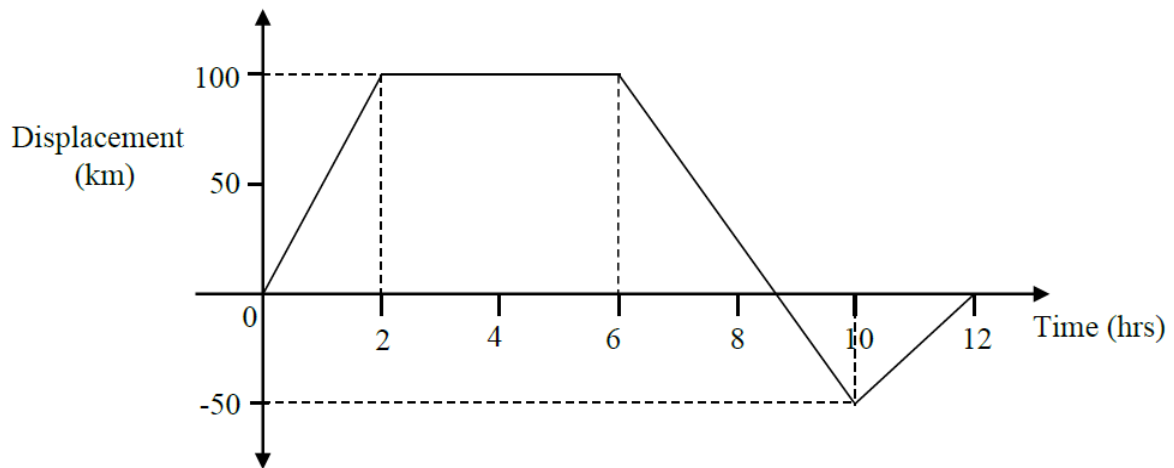# Year 11 Physics 2021
Worksheet 4

Write the answers in your Exercise Book.

1. A ball rolls from **rest** down an incline with a constant **acceleration** of $2m/s^2$.

    (a)   What is its speed after 3s?   **(1 mark)**

    (b)   How long will it take to reach a speed of $20m/s$?   **(1 mark)**

    (c)   How long will it take to travel 100m?   **(1 mark)**

2. The **displacement-time** graph of a car is given below.

    (a)   What is the displacement of the car after 2 hours?   **(1 mark)**

    (b)   What is the displacement of the car after 10 hours?   **(1 mark)**

    (c)   Describe the motion of the car in the interval 2-6 hours.   **(1 mark)**

    (d)   What is the **instantaneous speed** after 1 hour?   **(1 mark)**

    (e)   What is the **instantaneous velocity** after 8 hours?   **(1 mark)**

    (f)   What is the **acceleration** of the car after 8 hours?   **(1 mark)**

    (g)   Determine the **average speed** over the first 6 hours.   **(1 mark)**

    (h)   Determine the **total distance** covered by the car between t = 6 hours and t = 12 hours.   **(2 marks)**